

## **REMARKS/ARGUMENTS**

The foregoing claim amendments were submitted in an after-final amendment filed on March 3, 2008. In an Advisory Action issued on March 18, 2008, the proposed amendments were denied entry on the grounds that they raised new issues that would require further consideration and/or search.

Upon entry of the foregoing amendments, claims 16, 25, 29, 31, 33 and new claims 36 and 37 will be pending in the present application, of which claims 16 and 25 are the independent claims. Claims 2 and 17 were previously canceled. Claim 24 has been canceled in view of the incorporation of its limitations into independent claim 16. Claim 25 has been rewritten as an independent claim that incorporates the limitations of its base independent claim 16. As to the remaining dependent claims, new claim 36 is dependent upon independent claim 16; claims 29, 31, 33 and new claim 37 are dependent upon independent claim 25.

Claims 1, 3-15, 18-21, 28, 30, 32, 34 and 35, which were withdrawn from consideration as being non-elected in response to a restriction/election requirement, have been canceled in the foregoing amendments, without prejudice to present those claims in further continuing application(s) filed during the pendency of the present application.

### **Support for New Dependent Claims 36 and 37**

New dependent claims 36 and 37 simply recite a carbon filler material being applied as a coating or filler on the anode structures defined in independent claims 16 and 25. The application of carbon filler materials is fully supported in the specification at, for example, paragraph 0029 of the published application here:

[0029] Furthermore, the first carbon-based component may be applied to an anode gas diffusion layer that has previously been coated or filled with typical carbon filler materials.

The anode structure defined by new claims 36 and 27 thus has three carbon components: the carbon filler material, the first (or sacrificial) carbon component, and the second (electrocatalyst support) carbon component.

### **Antecedent Basis Rejection**

In the January 2, 2008 Office Action, claims 22-27, 29, 31 and 33 were rejected under 35 U.S.C. 112 for indefiniteness as lacking antecedent basis for the limitation “the improved anode structure” recited in those claims. Independent claim 16 has been amended to specifically define the fuel cell structure as being an anode structure. Independent claim 25 also recites the fuel cell structure as being an anode structure .

### **Rejections in view of Cabasso**

In the January 2, 2008 Office Action, claims 16, 22, 23, 26, 27, 31 and 33 were rejected as being anticipated under 35 U.S.C. 102(b) by Cabasso et al.U.S. Patent No. 5,783,325. Claims 24 and 25, which were canceled in the foregoing amendments, were also rejected under 35 U.S.C. 103(a) for obviousness in view of Cabasso.

Cabasso describes a standard gas diffusion electrode (GDE), in which the substrate is filled with a carbon/polymer (poly(vinylidene-fluoride)) fill and an electrocatalyst supported on carbon is then applied to the substrate. The carbon fill for the substrate and the carbon support for the electrocatalyst are therefore in

*separate* areas of Cabasso's GDE. The carbon/PVF fill aids the conductivity and water management of Cabasso's electrode. In the applicants' claimed structure, the first carbon component is present as a *sacrificial* carbon component, so that, during incidences of cell reversal, the first carbon component will degrade preferentially instead of, or at least to a greater degree than, the carbon support or carbon fill, if present.

The present claims are all now limited to the first sacrificial carbon component being mixed with the second carbon component/electrocatalyst and applied to the substrate (independent claim 16) or within the substrate (independent claim 25). By contrast, Cabasso nowhere even mentions the problem of carbon corrosion, either of the electrocatalyst support or of the substrate fill, during cell reversal. Moreover, Cabasso nowhere discloses or suggests that adding an extra, sacrificial carbon component, with the particular BET surface (at least  $350 \text{ m}^2 \text{ g}^{-1}$ ) recited each of the applicants' claims, the purpose of which is to corrode in preference to the electrocatalyst support and/or substrate fill.

\* \* \* \* \*

In view of the foregoing amendments and remarks, applicants submit that claims 16, 25, 29, 31, 33, 36 and 37 are allowable. The Examiner is invited to telephone the applicants' undersigned attorney at (312) 775-8000 if any unresolved matters remain.

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Respectfully submitted,

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